NAME OF THE WORK: PACKAGE NO.03
(CONSISTS OF 5 WORKS)

First and Part Bill

Quality Control Reports

BOOK NO – 01

QC ABSTRACT

NAME OF WORK: Package No-03 (Consists of 5 works)

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	KERB	Core Compressive strength	One Test		1	1
		Corrected Cylinder Compressive strength	One Test		1	1
		Equivalent Cube Compressive strength	One Test		1	1
7	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1

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8	Precast (230mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive Strength	One Test		1	1
9	RCC(M20)	Compressive Strength(7days and 28days)	12 sets		24	24
10	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
11	DBM	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral Aggregate	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
12	BC	SIEVE ANALYSIS	One Test		1	1
		STRIPPING VALUE	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		IMPACT VALUE	One Test		1	1
		Specific gravity	One Test		1	1
		Water Absorption	One Test		1	1
		Marshal Stability	One Test		1	1
		Marshal flow	One Test		1	1
		Percent air Voids	One Test		1	1
		Percent Voids in mineral	One Test		1	1
		Percent Voids filled with Bitumen	One Test		1	1
		Density	One Test		1	1
		Gradation	One Test		1	1
13	BITUMEN	Ductility	One Test		1	1
		Softening Point	One Test		1	1
		Penetration	One Test		1	1
		Flash Point	One Test		1	1
		Fire Point	One Test		1	1
14	TACK COAT	Rate of spread	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2023-02-09-01**	**Date: 11-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type	:	JSW 53grade	
Reference to BIS codes	:	IS 269:2015 Ordinary Portland cement Specification , IS 4031 (Part 4,5):1988 IS 4031 Part 1 (RA 2021) DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, (RA 2018) Determination of Fineness by Blaine Air Permeability IS 4031 Part 3, (RA 2019) Determination of Soundness, Clause 5, Clause 6 IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, (RA 2019) Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11, (RA 2019)DETERMINATION OF DENSITY , Clause 6	
Date of test	:	09-02-23	
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%	

Sl.No.	Physical properties	Results	Requirement as per IS 269:2015
1	Fineness by dry sieving (%)	2.15	–
2	Finess by Air permeablity method (m^2/kg,Min)	282.2	225m^2/kg, Min
3	Density (gm/cc)	3.15	–
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	185 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2023-02-09-01**	**Date: 09-03-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type	:	JSW 53grade	
Reference to BIS codes	:	IS 269:2015 Ordinary Portland cement Specification , IS 4031 (Part 4,5):1988 , IS 4031 Part 4, (RA 2019) Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, (RA 2019) Determination of Compressive Strength, Clause 6	
Date of test	:	09-02-23	
Environmental Conditions during test	:	Temperature: Humidity:	26°C 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 269:2015
1	3 Days	29.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	55.0N/mm^2	Not less than 53 N/mm^2

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2023-02-09-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type	:	40mm down size coarse aggregate	
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties	
Date of test	:	09-02-23	

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	374	374	2.5	97.5	90-100
3	20 mm	6738	7112	47.4	52.6	30-70
4	10 mm	5274	12386	82.6	17.4	10-35
5	4.75 mm	2081	14467	96.4	3.6	0-5
6	Pan	533	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2023-02-09-01** **Date: 13-02-23**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.5	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	1.49	–
5	Bulk Density(Compacted) (Kg/l)	1.51	–
6	Water Absorption(%)	0.25	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2023-02-09-01** **Date: 11-02-23**
Project Name	:	Package No-03 (Consists of 5 works)
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23
Date of Receipt	:	09-02-23
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2021 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	09-02-23

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	159	159	3.2	96.8	90-100
3	10 mm	2541	2700	54.0	46.0	25-55
4	4.75 mm	2117	4817	96.3	3.7	0-10
5	Pan	183	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2023-02-09-01** **Date: 11-02-23**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.6	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	14.8	
3	Specific Gravity	2.62	–
4	Bulk Density(Loose) (Kg/l)	1.50	–
5	Bulk Density(Compacted) (Kg/l)	1.55	–
6	Water Absorption(%)	0.28	–
7	Aggregate crushing Value(%)	26.6	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	24.3	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF FINE AGGREGATE

Date: 11-02-23

Lab ID	:	**CP-2023-02-09-01**
Project Name	:	Package No-03 (Consists of 5 works)
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23
Date of Receipt	:	09-02-23
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date oftest	:	09-02-23
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	35	35	3.5	96.5	90-100	90-100	90-100	95-100
3	2.36 mm	172	207	20.7	79.3	60-95	75-100	85-100	95-100
4	1.18 mm	116	323	32.3	67.7	30-70	55-90	75-100	90-100
5	600 micron	201	524	52.4	47.6	15-34	35-59	60-79	80-100
6	300 micron	217	741	74.1	25.9	5-20	8-30	12-40	15-50
7	150 micron	183	924	92.4	7.6	0-10	0-10	0-10	0-15
8	Pan	76	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2023-02-09-01** **Date: 11-02-23**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.94	–
2	Specific Gravity	2.55	–
3	Material finer than 75 micron(%)	7.6	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

* The results obtained are satisfactory as per standard requirements.

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Quality Manager

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TEST RESULTS OF STEEL

Lab ID : **CP-2023-02-09-01** **Date: 10-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Sample Type : A-one Gold

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2019.

Date of test: : 09-02-23

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	A-one Gold	Fe550	8	0.391	564	656	20.0%	Satisfactory	Satisfactory
2	A-one Gold	Fe550	10	0.616	569	661	20.0%	Satisfactory	Satisfactory
3	A-one Gold	Fe550	12	0.888	576	673	20.0%	Satisfactory	Satisfactory

* The results obtained are satisfactory as per standard requirements.

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Spectro Chemical Analysis, Physical, Non Destructive All Type of Metal Testing

Lab ID	:	**CP-2023-02-09-01**	**Date: 10-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type / Grade	:	A-one Gold	
Date of test	:	09-02-23	

CHEMICAL ANALYSIS

Sl. No.	Chemical Contents	8mm	10mm	12mm	Max. Limits as per IS:1786-2008, Gr. Fe 550
1	Carbon (C) %	0.141	0.130	0.144	0.300 Max
2	Phosphor (P) %	0.033	0.042	0.041	0.050 Max
3	Sulphur (S) %	0.035	0.043	0.043	0.055 Max
4	Sulphur & Phosphorus %	0.082	0.055	0.076	0.100 Max

Note : The above material confirms to ASI S S 304 with respect to elements analysed

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2022-12-31-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm	
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete	
Date of test	:	09/02/2023	
Grade of Kerb	:	M20	

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	77.05	165.24	2.864	4662	104.2	22.4	22.4	27.9
2	B	77.43	165.32	2.793	4708	101.5	21.6	21.6	26.9
3	C	77.25	165.87	2.815	4686	104.7	22.3	22.3	27.9

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF PRECAST COVER SLAB

Lab ID : **CP-2022-12-16-01** **Date: 13-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Sample Type /Size : Precast Cover Slab - 100mm Thick

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete

Date of test : 09/02/2023

Grade of Slab : M20

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	77.84	100.54	1.110	4758	102.3	21.5	20.0	25.0
2	Cover Slab-2	77.24	100.75	1.121	4685	105.1	22.4	20.9	26.1
3	Cover Slab-3	77.61	100.32	1.114	4730	104.8	22.2	20.6	25.8

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT OF PRECAST COVER SLAB

Lab ID	:	**CP-2022-12-16-01** **Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23
Date of Receipt	:	09-02-23
Sample Type /Size	:	Precast Cover Slab - 230mm Thick
Reference to BIS codes	:	IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete
Date of test	:	09/02/2023
Grade of Slab	:	M20

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
1	Cover Slab-1	77.45	230.15	2.111	4710	102.3	21.7	20.2	25.2
2	Cover Slab-2	77.68	230.51	2.130	4738	105.8	22.3	20.8	26.0
3	Cover Slab-3	77.44	230.11	2.112	4709	103.4	22.0	20.4	25.5

* The results obtained are satisfactory as per standard requirements.

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-11-01** **Date: 17/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 11-02-23

Customer ID : Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	17/02/2023	151.74 X 149.55 X 149.07	22693	8.259	426.4	18.8	18.7
2	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	17/02/2023	151.35 X 149.94 X 151.58	22694	8.447	429.7	18.9	
3	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	17/02/2023	150.38 X 150.15 X 151.36	22579	8.744	412.2	18.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-11-01** **Date: 10/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 11-02-23

Customer ID : Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 10/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	10/03/2023	150.12 X 151.46 X 150.85	22736	8.545	525.7	23.1	22.9
2	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	10/03/2023	151.58 X 150.80 X 149.56	22858	8.640	510.0	22.3	
3	Drain Bottom Raft Concrete - Balaji layout, 7th Cross & 1st Cross Road	M20	10/02/2023	10/03/2023	150.80 X 151.70 X 149.74	22876	8.871	534.7	23.4	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-14-01** **Date: 20/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 14-02-23

Customer ID : Drain Bottom Raft Concrete - Balaji layout, provision store Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 20/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	20/02/2023	151.80 X 149.46 X 151.08	22689	8.307	421.7	18.6	18.6
2	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	20/02/2023	150.33 X 150.48 X 151.68	22623	8.741	420.0	18.6	
3	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	20/02/2023	150.09 X 150.31 X 149.10	22560	8.794	422.4	18.7	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-14-01** **Date: 13/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 14-02-23

Customer ID : Drain Bottom Raft Concrete - Balaji layout, provision store Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	13/03/2023	150.36 X 151.12 X 150.78	22723	8.990	539.3	23.7	23.3
2	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	13/03/2023	150.48 X 150.03 X 151.36	22577	8.396	511.0	22.6	
3	Drain Bottom Raft Concrete - Balaji layout, provision store Road	M20	13/02/2023	13/03/2023	149.33 X 150.47 X 150.58	22471	8.751	527.1	23.5	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-15-01** **Date: 21/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 15-02-23

Customer ID : Drain Side Wall Concrete - Balaji layout, 7th Cross

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	21/02/2023	151.69 X 149.90 X 151.91	22737	8.300	417.8	18.4	18.5
2	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	21/02/2023	149.92 X 150.93 X 150.28	22628	8.354	414.1	18.3	
3	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	21/02/2023	149.08 X 151.48 X 151.61	22582	8.838	422.0	18.7	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-15-01** **Date: 14/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 15-02-23

Customer ID : Drain Side Wall Concrete - Balaji layout, 7th Cross

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 14/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	14/03/2023	151.25 X 151.21 X 151.53	22871	8.121	534.1	23.4	23.3
2	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	14/03/2023	149.80 X 151.38 X 151.10	22677	8.127	511.4	22.6	
3	Drain Side Wall Concrete - Balaji layout, 7th Cross	M20	14/02/2023	14/03/2023	149.57 X 151.81 X 149.58	22706	8.822	544.3	24.0	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-16-01** **Date: 22/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 16-02-23

Customer ID : Drain Side Wall Concrete - Balaji layout, provision store Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 22/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	22/02/2023	149.85 X 150.37 X 151.74	22533	8.644	415.4	18.4	18.6
2	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	22/02/2023	150.32 X 150.11 X 151.16	22566	8.906	428.1	19.0	
3	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	22/02/2023	149.08 X 149.25 X 151.86	22250	8.731	409.5	18.4	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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****End of Report****

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-16-01** **Date: 15/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 16-02-23

Customer ID : Drain Side Wall Concrete - Balaji layout, provision store Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 15/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	15/03/2023	149.33 X 149.15 X 151.89	22272	8.746	530.4	23.8	23.1
2	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	15/03/2023	149.49 X 150.12 X 149.92	22442	8.836	496.9	22.1	
3	Drain Side Wall Concrete - Balaji layout, provision store Road	M20	15/02/2023	15/03/2023	150.29 X 149.48 X 150.93	22465	8.546	523.9	23.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 23/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Bottom raft Concrete - 1st D Cross- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 23/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	23/02/2023	149.73 X 149.73 X 150.81	22419	8.483	414.9	18.5	18.4
2	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	23/02/2023	151.82 X 151.19 X 149.00	22953	8.766	421.2	18.3	
3	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	23/02/2023	149.14 X 149.67 X 149.95	22321	8.983	412.3	18.5	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore
Sig.....
Date.....

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Authorized Signatory
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 16/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Bottom raft Concrete - 1st D Cross- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	16/03/2023	150.72 X 149.42 X 150.03	22521	8.706	535.4	23.8	23.3
2	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	16/03/2023	151.67 X 149.98 X 150.77	22748	8.957	522.7	23.0	
3	Drain Bottom raft Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	16/02/2023	16/03/2023	151.02 X 149.75 X 151.84	22614	8.812	525.5	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 23/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 23/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	23/02/2023	150.61 X 150.42 X 151.89	22655	8.551	422.9	18.7	18.5
2	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	23/02/2023	150.95 X 150.58 X 149.86	22730	8.324	425.7	18.7	
3	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	23/02/2023	150.74 X 150.61 X 151.08	22702	8.994	410.6	18.1	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 16/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	16/03/2023	150.18 X 149.98 X 150.17	22524	8.580	537.7	23.9	
2	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	16/03/2023	151.48 X 150.83 X 150.60	22847	8.396	506.8	22.2	23.3
3	Drain Bottom raft Concrete - 2nd main Road, Shanubhoga Narayappa Layout	M20	16/02/2023	16/03/2023	150.18 X 149.61 X 151.20	22468	8.832	536.3	23.9	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 23/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Side Wall Concrete - 1st Cross Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 23/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	23/02/2023	150.61 X 150.42 X 151.89	22655	8.551	422.9	18.7	18.5
2	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	23/02/2023	150.95 X 150.58 X 149.86	22730	8.324	425.7	18.7	
3	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	23/02/2023	150.74 X 150.61 X 151.08	22702	8.994	410.6	18.1	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-17-01** **Date: 16/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 17-02-23

Customer ID : Drain Side Wall Concrete - 1st Cross Road

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 16/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	16/03/2023	150.18 X 149.98 X 150.17	22524	8.580	537.7	23.9	23.3
2	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	16/03/2023	151.48 X 150.83 X 150.60	22847	8.396	506.8	22.2	
3	Drain Side Wall Concrete - 1st Cross Road	M20	16/02/2023	16/03/2023	150.18 X 149.61 X 151.20	22468	8.832	536.3	23.9	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 24/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	150.64 X 151.13 X 151.55	22767	8.920	413.3	18.2	18.2
2	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	149.97 X 151.40 X 151.25	22706	8.823	415.1	18.3	
3	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	149.13 X 151.82 X 149.91	22642	8.509	410.6	18.1	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 17/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	151.88 X 151.46 X 150.14	23004	8.959	544.9	23.7	23.0
2	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	150.95 X 150.46 X 151.18	22711	8.976	501.4	22.1	
3	Drain Bottom raft Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	150.91 X 150.38 X 151.17	22694	8.952	527.5	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL Pro Sig Date BANGALORE

FOR CIVIL Pro,

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 24/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 24/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	151.61 X 149.19 X 149.09	22619	8.780	408.1	18.0	18.3
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	150.82 X 151.58 X 151.52	22861	8.547	421.5	18.4	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	24/02/2023	150.49 X 149.84 X 149.70	22548	8.815	417.7	18.5	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL Pro BANGALORE Sig..... Date.....

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 17/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 17/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	151.09 X 150.98 X 151.66	22811	8.964	533.7	23.4	23.1
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	150.76 X 150.23 X 150.32	22649	8.564	515.4	22.8	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	17/02/2023	17/03/2023	149.92 X 151.86 X 150.17	22767	8.850	528.0	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL Pro Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 25/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 25/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	25/02/2023	150.55 X 149.54 X 149.69	22513	8.687	415.8	18.5	18.8
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	25/02/2023	151.96 X 149.38 X 151.89	22700	8.333	428.0	18.9	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	25/02/2023	149.86 X 149.95 X 150.29	22471	8.585	426.1	19.0	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 18/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 18/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	18/03/2023	151.70 X 151.88 X 149.25	23040	8.865	537.3	23.3	22.9
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	18/03/2023	151.87 X 149.53 X 150.55	22709	8.927	506.0	22.3	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	18/02/2023	18/03/2023	149.29 X 150.14 X 149.68	22415	8.939	521.0	23.2	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL Pro Sig..... Date..... BANGALORE

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R KARTHIK RECHAN
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 27/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 26/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	26/02/2023	149.49 X 149.16 X 150.81	22297	8.357	403.0	18.1	18.2
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	26/02/2023	151.54 X 151.53 X 149.97	22963	8.974	414.5	18.0	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	26/02/2023	149.65 X 149.41 X 150.68	22358	8.178	410.8	18.4	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-21-01** **Date: 20/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 21-02-23

Customer ID : Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 19/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	19/03/2023	150.49 X 150.27 X 149.31	22615	8.818	538.8	23.8	23.3
2	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	19/03/2023	151.95 X 149.26 X 149.58	22679	8.750	516.5	22.8	
3	Drain Side Wall Concrete -2nd Main Road- Shanubhoga Narayanappa Layout	M20	19/02/2023	19/03/2023	149.08 X 151.21 X 149.73	22543	8.488	524.6	23.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore.

CIVIL Pro Sig..... Date..... BANGALORE

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R KARTHIK RECHAN
Authorized Signatory
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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-22-01** **Date: 28/02/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 22-02-23

Customer ID : Drain Side Wall Concrete - 1st D Cross- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 28/02/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	28/02/2023	150.69 X 150.28 X 150.27	22645	8.315	426.2	18.8	18.6
2	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	28/02/2023	150.61 X 150.79 X 151.89	22709	8.804	415.2	18.3	
3	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	28/02/2023	150.93 X 151.56 X 150.79	22875	8.467	425.8	18.6	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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R KARTHIK RECHAN
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Quality Manager

****End of Report****

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2023-02-22-01** **Date: 21/03/2023**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer's Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 22-02-23

Customer ID : Drain Side Wall Concrete - 1st D Cross- Shanubhoga Narayanappa Layout

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 (RA 2018) Methods of Tests for Strength of Concrete Cl.5

Date of test : 21/03/2023

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	21/03/2023	149.59 X 151.75 X 149.88	22701	8.987	529.7	23.3	23.2
2	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	21/03/2023	150.48 X 150.30 X 150.38	22618	8.527	519.6	23.0	
3	Drain Side Wall Concrete - 1st D Cross-Shanubhoga Narayanappa Layout	M20	21/02/2023	21/03/2023	149.63 X 150.79 X 149.81	22561	8.799	526.5	23.3	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

Sig.....
Date.....

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2023-02-27-01**	**Date: 01-03-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	27-02-23	
Type of Mix	:	WMM (Wet Mix Macadam)	
Source of Sample	:	Shanubhoga Narayanappa Layout	
Date of test	:	27-02-23	
Oven Dry Weight	:	11000	Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	258	258	2.3	97.7	95-100
22.4	2398	2656	24.1	75.9	60-80
11.2	2178	4834	43.9	56.1	40-60
4.75	2248	7082	64.4	35.6	25-40
2.36	1285	8367	76.1	23.9	15-30
0.6	1265	9632	87.6	12.4	8-22
0.075	958	10590	96.3	3.7	0-5

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore
Sig.....
Date.....

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

End of Report

TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2023-02-27-01**	**Date: 01-03-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	27-02-23	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Source of Sample	:	Shanubhoga Narayanappa Layout	
Date of test	:	27-02-23	

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.5	301.5
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	76.1	73.4
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	224.8	227.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.6	0.6
5	Aggregate impact value	(B/A)*100	25.2	24.3
6	Aggregate impact value (Mean of two tests)	Pecentage	24.8	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore
Sig.
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Quality Manager

End of Report

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2023-02-27-01**	**Date: 01-03-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	27-02-23	
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)	
Source of Sample	:	Shanubhoga Narayanappa Layout	
Date of test	:	27-02-23	

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	24.9%	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
WATER TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

TEST RESULTS OF GRADATION FOR DBM
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID : **CP-RW-2023-02-09-01** **Date: 13-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Type of Mix : DBM-Plant (Dense Bituminous Macadam)

Date of test : 09-02-23

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Specification Limits as per MORTH specification Table 500-10 (grading -2)
37.5	0	0	0	100	100
26.5	252	252	5.04	94.96	90-100
19	353	605	12.10	87.90	71-95
13.2	455	1060	21.20	78.80	56-80
4.75	1752	2812	56.24	43.76	38-54
2.36	405	3217	64.34	35.66	28-42
0.3	1340	4557	91.14	8.86	7-21
0.075	210	4767	95.34	4.66	2-8
PAN	233	5000	0.00	0	0

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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End of Report

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR DENSE BITUMINOUS MACADAM

Lab ID : **CP-RW-2023-02-09-01** **Date: 13-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Type of Mix : DBM (Dense Bituminous Macadam)

Date of test : 09-02-23

Table 500-6 : Physical Requirements fo Coarse Aggregate for Dense Bituminous Macadam

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.2	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	10.4		
Strength	Aggregate Impact Value	22.0	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.58	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.38	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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Quallity Manager

TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2023-02-09-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Type of Mix	:	DBM (Dense Bituminous Mecadam)	
Date of test	:	09-02-23	

The results of the tests conducted on the Dense Bituminous Macadam mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2023-02-09-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Type of Mix	:	DBM(Dense Bitumnous Macadam)	
Date of test	:	09-02-23	

Type of Binder	:	60/70
% of Binder Used	:	4.5%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	9 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2023-02-09-01** **Date: 13-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Type of Mix : BC-Plant (Bituminous Concrete)

Date of test : 09-02-23

Oven Dry Weight : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-17(grading-2)
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	702	791	15.8	84.2	70-88
4.75	895	1686	33.7	66.3	53-71
2.36	587	2273	45.5	54.5	42-58
1.18	492	2765	55.3	44.7	34-48
0.6	503	3268	65.4	34.6	26-38
0.3	528	3796	75.9	24.1	18-28
0.15	458	4254	85.1	14.9	12-20
0.075	350	4604	92.1	7.9	4-10
PAN	396	5000	100	0.0	0

* The results obtained are satisfactory as per standard requirements.

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End of Report

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2023-02-09-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Type of Mix	:	BC(Bitumenous Concrete)	
Date of test	:	09-02-23	

Type of Binder	:	60/70
% of Binder Used	:	5.4%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.8 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.5	1.5	98.3	Minimum Retained Coating 95%
2	98.5	1.5		
3	98.0	2.0		

* The results obtained are satisfactory as per standard requirements.

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****End of Report****

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Lab ID : **CP-RW-2023-02-09-01** **Date: 13-02-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 09-02-23

Type of Mix : BC (Bituminous Concrete)

Date of test : 09-02-23

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	12.4	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	11.8		
Strength	Aggregate Impact Value	22.1	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.68	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.21	Maximum 2%	IS:2386 Part III

* The results obtained are satisfactory as per standard requirements.

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2023-02-09-01**	**Date: 13-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Type of Mix	:	BC (Bituminous Concrete)	
Date of test	:	09-02-23	

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.14	11.13	10KN(min)
2	Marshal flow at 60°C, mm	3.52	3.51	2-4
3	Percent air Voids	4.82	4.83	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.28	14.26	13-15
5	Percent Voids filled with Bitumen(VFB %)	71.87	71.63	65-75
6	Density, g/cc	2.25	2.26	–

* The results obtained are satisfactory as per standard requirements.

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2023-02-09-01**	**Date: 11-02-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer's Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	09-02-23	
Sample Type	:	Bitumen	
Reference to BIS codes	:	IS: 1201-2021, IS: 1202-1220(1978) (Reaffirmed-2019)	
Date of test	:	09-02-23	

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**58**	Min 45
2	Softening Point, °C	**51.2**	Min. 47°C
3	Ductility, cm	**100**	Min. 47 cm
4	Flash point, °C	**312**	Min. 220°C
	Fire point, °C	**321**	

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2023-03-31-01**	**Date: 01-04-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	31-03-23	
Type of Mix	:	DBM (Dense Bituminous Macadam)	
Source of Sample	:	2nd Main Shanubhoga Narayanappa layout	
Date of test	:	31-03-23	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	478.5	478
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	4.70	4.80
7	Average percentage	%	4.75	

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Lab ID : **CP-RW-2023-03-31-01** **Date: 01-04-23**

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 478.5

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH
37.5	0	0	0	100.0	100
26.5	34	34	7.11	92.9	90-100
19	41	75	15.67	84.3	71-95
13.2	109	184	38.45	61.5	56-80
4.75	79	263	54.96	45.0	38-54
2.36	44	307	64.16	35.8	28-42
0.3	83	390	81.50	18.5	7-21
0.075	58	448	93.63	6.4	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 478

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification
37.5	0	0	0	100.0	100
26.5	31	31	6.49	93.5	90-100
19	42	73	15.27	84.7	71-95
13.2	120	193	40.38	59.6	56-80
4.75	86	279	58.37	41.6	38-54
2.36	31	310	64.85	35.1	28-42
0.3	70	380	79.50	20.5	7-21
0.075	72	452	94.56	5.4	2-8

* The results obtained are satisfactory as per standard requirements.

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2023-04-01-01**	**Date: 03-04-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	01-04-23	
Type of Mix	:	BC (Bituminous Concrete)	
Source of Sample	:	2nd Main Shanubhoga Narayanappa layout	
Date of test	:	01-04-23	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474.5	474
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	5.50	5.60
7	Average percentage	%	5.55	

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Lab ID : **CP-RW-2023-04-01-01** **Date: 03-04-23**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474.5

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	26	26	5.5	94.5	90-100
9.5	54	80	16.9	83.1	70-88
4.75	129	209	44.0	56.0	53-71
2.36	56	265	55.8	44.2	42-58
1.18	43	308	64.9	35.1	34-48
0.6	30	338	71.2	28.8	26-38
0.3	33	371	78.2	21.8	18-28
0.15	27	398	83.9	16.1	12-20
0.075	42	440	92.7	7.3	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	38	38	8.0	92.0	90-100
9.5	80	118	24.9	75.1	70-88
4.75	109	227	47.9	52.1	53-71
2.36	40	267	56.3	43.7	42-58
1.18	30	297	62.7	37.3	34-48
0.6	41	338	71.3	28.7	26-38
0.3	40	378	79.7	20.3	18-28
0.15	32	410	86.5	13.5	12-20
0.075	30	440	92.8	7.2	4-10

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2023-04-01-01** **Date: 02-04-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 01-04-23

Type of Mix : Tack coat

Date of test : 01-04-23

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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Quality Manager

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR DBM (IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2023-04-05-01**	**Date: 06-04-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	05-04-23	
Type of Mix	:	DBM (Dense Bituminous Macadam)	
Source of Sample	:	KBR Infratech Road	
Date of test	:	05-04-23	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	479.5	479
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	4.50	4.60
7	Average percentage	%	4.55	

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Lab ID : **CP-RW-2023-04-05-01** **Date: 06-04-23**

AFTER EXTRACTION(Trail-1)

Weight of Sample(gm) : 479.5

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH
37.5	0	0	0	100.0	100
26.5	29	29	6.05	94.0	90-100
19	47	76	15.85	84.2	71-95
13.2	113	189	39.42	60.6	56-80
4.75	83	272	56.73	43.3	38-54
2.36	49	321	66.94	33.1	28-42
0.3	86	407	84.88	15.1	7-21
0.075	60	467	97.39	2.6	2-8

AFTER EXTRACTION(Trail-2)

Weight of Sample(gm) : 479

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification
37.5	0	0	0	100.0	100
26.5	27	27	5.64	94.4	90-100
19	48	75	15.66	84.3	71-95
13.2	126	201	41.96	58.0	56-80
4.75	89	290	60.54	39.5	38-54
2.36	36	326	68.06	31.9	28-42
0.3	72	398	83.09	16.9	7-21
0.075	65	463	96.66	3.3	2-8

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
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Quality Manager

End of Report

TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2023-04-06-01**	**Date: 07-04-23**
Project Name	:	Package No-03 (Consists of 5 works)	
Agency	:	M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097	
Customer Reference	:	BBMP/EE/BTP/WO/78/2022-23	
Date of Receipt	:	06-04-23	
Type of Mix	:	BC (Bituminous Concrete)	
Source of Sample	:	1st D Cross Shanubhoga Narayanappa layout	
Date of test	:	06-04-23	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	W1	500	500
2	Weight of the sample After extraction	W2	474	475
3	Initial weight of Paper	W3	4	4
4	Final weight of Paper	W4	6	6
5	Increase in weight of Filter Paper	W5=W4-W3	2	2
6	Bitumen percentage	$\frac{W1-W2+W5}{W1}$ X 100	5.60	5.40
7	Average percentage	%	5.50	

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore
CIVIL PRO Sig Date BANGALORE

FOR CIVIL Pro.
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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | ENVIRONMENTAL
WATER TESTING | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES

Lab ID : **CP-RW-2023-04-06-01** **Date: 07-04-23**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 474

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	28	28	5.9	94.1	90-100
9.5	57	85	17.9	82.1	70-88
4.75	124	209	44.1	55.9	53-71
2.36	50	259	54.6	45.4	42-58
1.18	46	305	64.3	35.7	34-48
0.6	31	336	70.9	29.1	26-38
0.3	35	371	78.3	21.7	18-28
0.15	33	404	85.2	14.8	12-20
0.075	46	450	94.9	5.1	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 475

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	34	34	7.2	92.8	90-100
9.5	78	112	23.6	76.4	70-88
4.75	101	213	44.8	55.2	53-71
2.36	46	259	54.5	45.5	42-58
1.18	32	291	61.3	38.7	34-48
0.6	42	333	70.1	29.9	26-38
0.3	44	377	79.4	20.6	18-28
0.15	36	413	86.9	13.1	12-20
0.075	32	445	93.7	6.3	4-10

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
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DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2023-04-06-01** **Date: 07-04-23**

Project Name : Package No-03 (Consists of 5 works)

Agency : M/s Karthik Enterprises, No.123, Aishwarya, 3rd Cross, Ramanna Garden, Vidyaranyapura, Bengaluru-560097

Customer Reference : BBMP/EE/BTP/WO/78/2022-23

Date of Receipt : 06-04-23

Type of Mix : Tack coat

Date of test : 06-04-23

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.78	0.748
4	Final weight of plate after application of tack Coat (c)	Kg	0.803	0.771
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

* The results obtained are satisfactory as per standard requirements.

Assistant Executive Engineer
Kodigehalli Sub Division
BBMP, Bangalore

CIVIL PRO BANGALORE Sig..... Date.....

FOR CIVIL Pro.

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Quality Manager

End of Report